

REMARKS

Claims in the case are 1, 12, 13 and 15, upon entry of this amendment. Claim 15 has been added, and Claim 14 has been cancelled herein. No claims have been amended herein. Claims 2-11 were previously cancelled.

Basis for added Claim 15 is found in Claims 1 and 14, as it is a combination thereof.

Claims 1 and 12-14 stand rejected under 35 U.S.C. §112, first paragraph. This rejection is respectfully traversed with regard to the following remarks.

Applicants respectfully contend that the specification provides a written description of their invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable a skilled artisan in the related art to make and use the recited invention. As such, the specification provides basis and support for the present claims.

Attention is directed to page 9, lines 4 and 5 of the specification which clearly recites that "[t]he **mixture obtained** in this way **is then converted** [i.e., reacted] into TPU" in a reactor, such as an extruder or reaction tube. Attention is further directed to Example 1, at page 11, lines 4-13 of the specification, in which the diisocyanate and diols were first each separately metered into a static mixer. **Premixing** of the diisocyanate and diols occurred in the static mixer. The **reaction** of the diisocyanate and diols was then performed in a reaction tube.

It is respectfully submitted that the specification provides basis for the mixing of components in an apparatus, and then reacting the mixed components in a separate reactor. Accordingly, the mixture prepared in the first apparatus must necessarily be removed therefrom and then introduced into the reactor, as would be recognized by a skilled artisan. As such, Applicants' specification is deemed to provide sufficient basis for the present claims.

It is further respectfully submitted that the Examiner's comments regarding Applicants' previous Amendment dated 4 February 2004 (referred to in the Office Action as the "past response of February 9, 2004") are deemed to be moot. In particular, because the Examiner maintained his rejections of Applicants' claims (of the 4 February 2004 Amendment) under 35 U.S.C. §112, first paragraph in a Final Rejection dated 19 May 2004.

In light of the preceding remarks, Applicants' claims are deemed to be fully supported by the specification. Reconsideration and withdrawal of the present rejection is respectfully requested.

Claims 1, 12 and 13 stand rejected under 35 U.S.C. §103(a) as being unpatentable over United States Patent No. 5,739,252 (**Kirchmeyer et al**) in view of United States Patent No. 3,642,964 (**Rausch et al**). This rejection is respectfully traversed in light of the amendments herein and the following remarks.

Kirchmeyer et al disclose the preparation of thermoplastic polyurethaneurea elastomers by first mixing the isocyanate and active hydrogen reactants in a separate first static mixer (under conditions such that no reaction occurs between these reactants), and then reacting the mixed reactants in a second and separate static mixer (abstract).

Rausch et al disclose a process for preparing thermoplastic polyurethanes in an extruder (abstract). Rausch et al disclose both mixing and reaction occurring within a single apparatus (*i.e.*, within an extruder).

Kirchmeyer et al discloses the preparation of thermoplastic polyurethaneurea elastomers by means of two static mixers that are arranged in series. Rausch et al disclose a process for preparing thermoplastic polyurethanes in an extruder. As such, neither Kirchmeyer et al nor Rausch et al provide the requisite disclosure that would motivate a skilled artisan to combine or otherwise modify their respective disclosures to arrive at Applicants' presently claimed method.

As the Court of Appeals for the Federal Circuit has stated, there are three possible sources for motivation to combine references in a manner that would render claims obvious. These are: (1) the nature of the problem to be solved; (2) the teaching of the prior art; and (3) the knowledge of persons of ordinary skill in the art, *In re Rouffet*, 47 U.S.P.Q.2d 1453, 1458 (Fed. Cir. 1998). The nature of the problem to be solved and the knowledge of persons of ordinary skill in the art are not present here and have not been relied upon in the rejection. As for the teaching of the prior art, the above discussion has established that neither of the patents relied upon in the rejection provide the requisite teaching, and certainly do not provide the motivation or suggestion to combine that is required by Court decisions.

Rausch et al disclose and teach a process of preparing thermoplastic polyurethanes in a an extruder (i.e., in a single apparatus). As such, any disclosure or teaching of Rausch et al relative to the temperature of the reactive components as they are introduced into the extruder do not reach or reasonably extend to Kirchmeyer et al, which makes use of separate mixing and reaction devices.

It is respectfully submitted that the rejection appears to impermissibly use Applicants' application as a blueprint for selecting and combining or modifying the cited references to arrive at Applicants' claimed invention, thereby making use of prohibited hindsight in the selection and application of those cited references. The use of hindsight reconstruction of an invention is an inappropriate process by which to determine patentability, *In re Rouffet*, 47 U.S.P.Q.2d at 1457 (Fed. Cir. 1998). "To imbue one of ordinary skill in the art with knowledge of the invention in suit, when no prior art reference or references of record convey or suggest that knowledge, is to fall victim to the insidious effect of a hindsight syndrome wherein that which only the inventor taught is used against its teacher." *W.L. Gore & Assoc. v. Garlock, Inc.*, 721 F.2d 1540, 1553 (Fed. Cir. 1983). It is essential that "the decisionmaker forget what he or she has been taught at trial about the claimed invention and cast the mind back to the time the invention was made ... to occupy the mind of one skilled in the art who is presented only with the references, and who is normally guided by the then-accepted wisdom in the art." *Id.* One cannot use hindsight reconstruction to pick and choose among isolated disclosures in the prior art to deprecate the claimed invention. *In re Fine*, 837 F.2d 1071, 1075 (Fed. Cir. 1988).

Applicants respectfully counter the assertion on page 5 of the Office Action of September 15, 2004, that their examples are not commensurate in scope with the claims, and as such arguments relative thereto are not probative. As discussed previously herein, at page 9, lines 4 and 5 of the specification it is clearly recited that "[t]he mixture obtained in this way is then converted [i.e., reacted] into TPU" in a reactor, such as an extruder or reaction tube. In addition, Example 1, at page 11, lines 4-13 of the specification, discloses the separate metering of diisocyanate and diols into a static mixer, in which they are premixed. Reaction of the premixed diisocyanate and diols was then performed in a reaction tube. The specification

provides basis for: (i) the mixing of components in an apparatus, and then reacting the mixed components in a separate reactor; and accordingly (ii) removing premixed components from an apparatus and then introducing them into a separate reactor, in which they are reacted. As such, the specification provides basis for the present claims, and as the discussion of Example 1 *supra* and the other examples *infra*, demonstrates, the examples are commensurate in scope with the present claims.

With regard to the criticality of Applicants' claimed limitations, attention is directed to the examples at pages 11-15 of the specification. In Examples 1, 2, 4 and 5, Components (A) and (B) were first mixed in a static mixer, and then the homogenous mixture was fed into and reacted in either a reaction tube (Examples 1, 2 and 4) or an extruder (Example 5). Applicants submit that in Examples 1, 2, 4 and 5, the residence time in the static mixer was less than one second (calculated as being 0.98 seconds). Examples 1, 2 and 5 are according to the present invention, and the temperature of Components (A) and (B) was about 140°C in Examples 1 and 2, and about 90°C in Example 5. Comparative Example 4 was conducted in accordance with the method of Example 1, but Component (A) was fed into the static mixer at a temperature of 60°C, while Component (B) was fed into the static mixer at a temperature of 140°C (i.e., at a temperature difference of 80°C). Comparative Example 4 had to be terminated due to a high pressure increase within the static mixer.

In Comparative Example 3, both mixing and reaction were conducted in an extruder. Components (A) and (B) were fed into the extruder at temperatures of about 90°C and 140°C, respectively. The resulting TPU of Example 3 had poorer melting characteristics relative to the TPU's of Examples 1 and 2. See page 12, lines 9-20 and Table 1 of the specification. Applicants submit that in Comparative Example 3, Components (A) and (B) were homogeneously mixed within about 3 seconds in the first part of the extruder (as determined by calculation).

Comparative Example 6 was performed in a manner similar to that of Example 5, but Component (A) was introduced into the static mixer at temperature of 23°C, and Component (B) was introduced into the static mixer at temperature of

80°C (i.e., at a temperature difference of 57°C, and at temperatures that are outside of Applicants' presently claimed range of 90°C to 180°C). The TPU of Example 5 had improved melting characteristics relative to the TPU of Example 6.

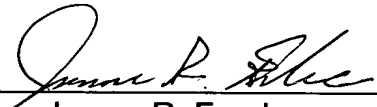
In light of the preceding remarks, Applicants' claims are deemed to be unobvious and patentable over Kirchmeyer et al in view of Rausch et al.

Reconsideration and withdrawal of this rejection is respectfully requested.

JRF ~~un~~obvious in the Office Action of September 15, 2004. As such, independent Claim 15 has been added in the present invention, and is a combination of Claims 1 and 14. Accordingly Claim 14 has been cancelled herein.

In light of the amendments herein and the preceding remarks, Applicants' presently pending claims are deemed to meet all the requirements of 35 U.S.C. §112, and to define an invention that is unanticipated, unobvious and hence, patentable. Reconsideration of the rejections and allowance of all of the presently pending claims is respectfully requested.

Respectfully submitted,

By 
James R. Franks
Agent for Applicants
Reg. No. 42,552

Bayer MaterialScience LLC
100 Bayer Road
Pittsburgh, Pennsylvania 15205-9741
(412) 777-3808
FACSIMILE PHONE NUMBER:
(412) 777-3902
s:\shared\kgb\jrf319am